ARTIFICIAL NESTING MOUNDS FOR THE WATER MOUSE, *XEROMYS MYOIDES*. *Memoirs of the Queensland Museum 49(1): 480, 2003:-* In intertidal communities of southeastern Queensland the Water Mouse *Xeromys myoides* constructs nests of five basic types: 1) free-standing mud mounds within areas of sedgeland, chenopod shrubland, Marine Couch *Sporobolus virginicus* grassland or mangrove forest; 2) mounds associated with small, slightly elevated 'islands' standing away from the supralittoral bank; 3) mounds or holes in the supralittoral bank; 4) mud and leaf constructions inside hollow tree trunks; and 5) nests made in spoil heaps of human origin (Van Dyck & Gynther, 2003). Ultimately, the locations (and, therefore, type) of nests constructed by these carnivorous rodents appears to be a compromise between a nest's ability to withstand spring tides and its proximity to the most highly productive resources of the mangrove zone.

Inevitably, some habitats that otherwise would appear suitable for Water Mice either offer insufficient elevation above the surrounding intertidal community or lack suitable hollow tree trunks to allow nest construction and breeding to proceed without inundation. Given the use by *X. myoides* of human-generated spoil heaps for nesting (excavated material, tree stump waste, bulldozed soil, gravel, rock and concrete: Van Dyck & Gynther, 2003), the provision of artificial nesting mounds might represent a useful management tool to encourage this vulnerable species to colonise new sites.

From 5 May - 24 June 1999, 12 artificial nesting mounds were installed on intertidal wetland (centre at 27°50.857'S, 153°22.470'E) close to the Coomera River, southeastern Queensland. The site, although relatively close to an established *X. myoides* population (approximately 400m northwest), presented few natural nesting opportunities. It was characterised by extensive *S. virginicus* grassland flats, a relatively immature mangrove community, a small Swamp Oak *Casuarina glauca* component and an elevation throughout below the 1m contour.

Each artificial nest installation consisted of four copper napthenate-treated hardwood stakes (70mm × 50mm × 2m) set into the corners of a rough, 1 m square and driven into the substrate until about 1.5m of stake remained above ground. Inside the stakes, a cylinder of heavy duty plastic garden trellis (1.2m high, 75mm square lattice pattern) was secured with tie wires. For mouse access, a length of 100mm diameter agricultural pipe with a number of 40mm diameter holes cut along its length was laid on the ground across the middle of the cylinder, each end protruding from the trellis material. (This pipe was later deemed unnecessary — see below.) Commercial potting mix was then tipped in to form a central core of earth and commercial mulch (chipped tree material) was packed around and on top of it to fill the cylinder up to about 1m high (Fig. 1A).

Three artificial mounds were installed among mangroves near the river's edge. Another was positioned on a degraded mud flat, two were installed on low S. *virginicus*/*C. glauca* islands and the remainder (six) were erected in the open *S. virginicus* grassland.

Initially, the artificial mounds were monitored regularly, and as early as 2 June 1999 (three weeks after installation) dismembered crab remains were found on top of two mounds. On 5 August 1999 rodent droppings were retrieved from one mound and later identified as *Rattus* sp. (B. Triggs pers. comm.). By this time it was apparent that all but one mound had been completely inundated by spring tides, and many needed topping up. In particular, the two near the river's edge were rapidly eroding. By 14 October 1999, more droppings were retrieved from another mound, but the occurrence nearby of chewed leaf galls from the mangrove *Avicennia marina* indicated *Rattus rattus* was probably involved. Thereafter, the artificial nests were left unchecked until December 2002, when all 12 mounds were revisited. In all but one, the entire mulch pile inside the trellis cylinders had been washed away. However, one cylinder, installed on a small *S. virginicus* 'island' (27°50.808'S, 153°22.479'E) contained a functional *X. myoides* nest (Fig. 1B). The total nest height (nest mound plus 20cm mud bank) was 47cm, mound circumference was 235cm and three access holes were incorporated into the structure; two at ground level and one at 20cm (at mound base). The mounding material was mostly sand and mud but clearly contained traces of the original soil and mulch provided. Much of the surface of the mound was consolidated by *S. virginicus*, and, as is typical of this rodent, small claws and carapaces of crabs (here, the Mottled Shore Crab *Paragrapsus laevis*) were incorporated into the external mud daubing. The agricultural pipe access was completely blocked with mud.

The provision of such nesting frames, furnished instead with more robust trellis and a much less friable soil, may not only expand the area of habitat available to the species but may become increasingly important at sites where foxes and feral pigs are a potential threat to the nesting success or existence of local *X. myoides* populations.

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Literature Cited

VAN DYCK, S. & GYNTHER, I., 2003. Nesting strategies of the Water Mouse *Xeromys myoides* in southeast Queensland. Memoirs of the Queensland Museum: this volume.

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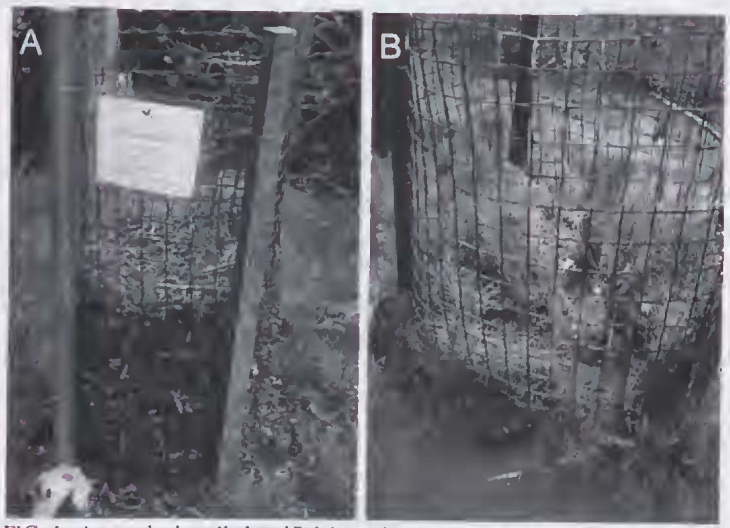

FIG. 1. A, newly installed artificial nesting mound for *Xeromys myoides*. B, functional *X. myoides* mound within artificial nesting frame.